49. (new ) The fuel cell system according to claim 47, further comprising at least one conduit for gaseous communication between the anode chamber and the cathode chamber.

50. (new) The fuel cell according to claim 49, further comprising a valve provided with the conduit to regulate gaseous communication between the anode chamber and the cathode chamber.

51. (new) The fuel cell according to claim 47, wherein the fuel source is comprised of a concentrated methanol solution.

52. (new) The fuel cell according to claim 51, wherein the solution includes a methanol concentration of greater than 50%.

53. (new) The fuel cell according to claim 47, further comprising a fuel concentration sensor integrated into the anode chamber.

54. (new) A fuel cell system comprising an anode chamber having a fuel and a cathode chamber in gaseous communication with the anode chamber via a conduit, wherein no liquid communication occurs between the anode chamber and the cathode chamber.

55. (new) A method for encouraging water and air exchange in fuel cell system, comprising collecting an effluent gas produced in the anode chamber of the fuel cell and exhausting the collected gas through the cathode chamber to the ambient environment.

56. (new) An apparatus for encouraging water and air exchange in a fuel cell system, comprising collecting means for collecting an effluent gas produced in the anode chamber of the fuel cell and exhausting means for exhausting the collected gas through the cathode chamber to the ambient environment.